

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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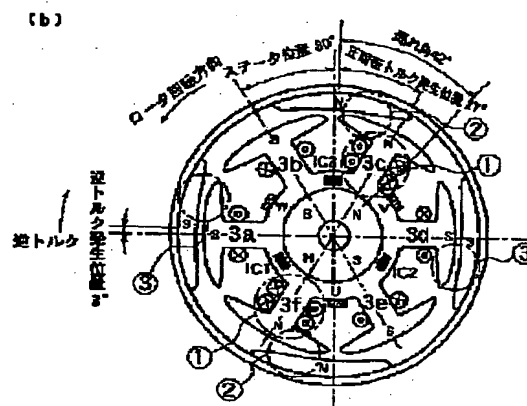
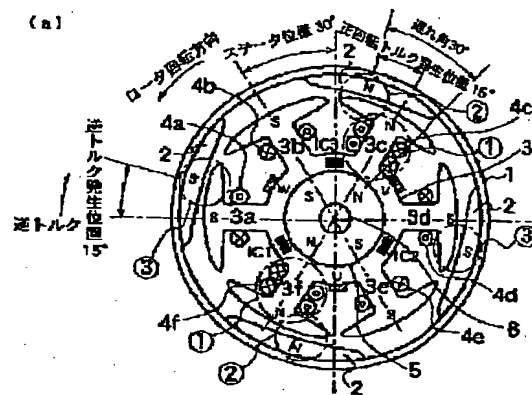
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INVENTOR : SEKINE TAKESHI;

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TITLE : BRUSHLESS MOTOR



**ABSTRACT :** PROBLEM TO BE SOLVED: To obtain a low-noise brushless motor wherein rotational speed can be swiftly changed by optimally controlling the timing of changing armature coil current with a DC motor designed as brushless structure.

**SOLUTION:** Armature coils 4a-4f are placed on a stator 3, and a rotor 1 provided with a main magnet 2 is placed outside the stator. A sensor magnet 5 is installed on a shaft 6 which rotates integrally with the rotor 1, and Hall IC's 1-3 for detecting the direction of magnetic fields by the sensor magnet 5 are placed on the stator 3. An angle-of-lead controlling means 12a receives a sensor signal, calculates the rotational speed of the motor and the amount of its change from the frequency of detection of variation in magnetic field direction, sets an amount of angle of lead in correspondence to the rotational speed, and corrects the amount of angle of lead using a correction value according to the amount of the change in rotational speed. Angle-of-lead control is exercised according to the corrected amount of angle of lead by means of a timing controlling means 12b, and timing of changing the current of MOSFETs' Q1-Q6 is controlled through a motor drive circuit 13.

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